

Farms in the Black Forest of Baden-Württemberg: A Historical Review

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Today the Black Forest is an internationally renowned tourist region in Germany. For centuries the Black Forest remained as a low mountain range regarded as not suitable for settlement due to its unfavourable climatic conditions and difficult terrain. Clearing the dense forests and settlement therefore started at a historically late stage compared to other regions of Germany, about 1000 years ago. Due to the special conditions in this area, the structure of the settlement had to be quite different to those landscapes with more favourable conditions for agriculture. A single-farm settlement developed, farms situated 200 to 400 m away from each other, surrounded by meadows, agricultural land and forests and owned by the farmer's family. This structure has remained in some areas until today; in other areas different types of settlement took place, and great changes occurred during history. A special type of agroforestry – a slash-and-burn-management of forests – also took place 150 to 200 years ago.

Keywords: deciduous woods, scattered village, inner colonisation, three field system, Roman occupation, slash-and-burn-management

INTRODUCTION

Germany is a middle-sized European country (357,000 km²) with a large population (80 M inhabitants) and a high standard of industrial production. Nevertheless, the country has about 10 M ha of well-managed and highly used forests (29% of the land surface). The original distribution of tree species with about 80% deciduous trees has been converted to two-thirds coniferous trees and only one-third remaining deciduous trees. The ownership of forestland is characterised by a dominance of private forests (46% of the area). The State, represented by the different 'lands' of the Federal Republic of Germany – particularly Baden-Württemberg and Bavaria – owns 34%, and the municipalities have 20% at their disposal. Forests are concentrated mainly in the mountainous regions in central and south Germany, and also on poorer soils in the great plains of north Germany.

The Black Forest is one of the low mountain ranges in the south-west corner of Germany, situated in the state of Baden-Württemberg. The mountains cover an area of 500,000 ha, reaching 160 km from north to south and 40-50 km from east to west. The highest elevation is nearly 1500 m. The entire Black Forest area is an

internationally renowned recreation area, attractive in summer for hiking and mountain-biking as well and in winter for all kinds of skiing. The hot springs at the western border have been used for recreation since the time when the Roman Empire expanded into Germany via the Alps and following the Rhine-Valley. Famous spa resorts, including Baden-Baden and Badenweiler, were founded by the Romans. The Black Forest is still characterised by dense forest cover, with more than 65% of the total land area as forests (Table 1).

Table 1. Structure of land use in the Black Forest

Land use	Area (ha)	Share of total area (%)
Forestland	327,000	65.4
Agricultural land	136,000	27.2
Settlement, traffic	31,300	6.3
Water	3,250	0.7
Other uses	1,790	0.4
Total	500,000	100

Forest density varies between regions of the Black Forest. In the middle and the southern parts the conditions for farming, mainly caused by soil and climate, are better than in the north, so there is a more open landscape. The forests are pushed back to 50-55% of the land area, in contrast to the northern Black Forest where 70-80% is forestland. The distribution of forest ownership is dominated by private forests (41%), followed by communities (31%) and the state forest owned by the 'Land' of Baden-Württemberg (28%).

This paper describes the evolution and the layout of various types of settlement in the Black Forest. The changes which took place during the centuries are illustrated with graphs and pictures. A special type of agroforestry – a slash-and-burn-management of forests – also took place 150 to 200 years ago, and this type of management is described. Finally, an overview is provided of the social and economic situation of farms in the Black Forest as it is today.

THE HISTORY OF COLONISATION AND SETTLEMENT IN THE BLACK FOREST

At the beginning of human influence, nearly the entire land surface of Germany was covered with forests. Only soils which were unsuitable for the growth of trees – such as moors, swamps and rocky areas – remained without forest. Reconstructing the original distribution of soil conditions, it has been estimated that about 75-80% of the total land area carried a dense primeval forest. In these untouched forests, beech was the dominant tree species, and all deciduous tree species together reached a share of 80%. Germany was part of the region of so-called 'summer-green deciduous woods' in Europe. Coniferous trees were originally found only in the higher elevations of mountain areas, in the surroundings of swamps and on very poor soils on the plains.

The first period of clearing these virgin forests for agricultural purposes was during the so-called Neolithic Age or New Stone Age – about 4,000 to 5,000 years ago (3,000 to 1,800 BC). During this time the first permanent settlements were built and the forests were cleared around these little villages to grow grain and other crops and to establish pastures for cattle breeding. These first settlements concentrated on the most favourable soils for agricultural purposes with regard to fertility, climate and open country. The low mountain ranges and the Alps were avoided when these first people built permanent settlements. Even in the 6th and 7th century AD, the Black Forest remained untouched from clearings and settlements. All villages concentrated on regions with better sites. In these old settled parts of Germany a special type of village was developed – a so-called ‘scattered village’ or *Haufendorf*. The farm-houses were built irregularly around the church and the market place, along two to five streets. Figure 1 illustrates how these settlements were distributed throughout Baden-Württemberg in the 6th and 7th century AD.

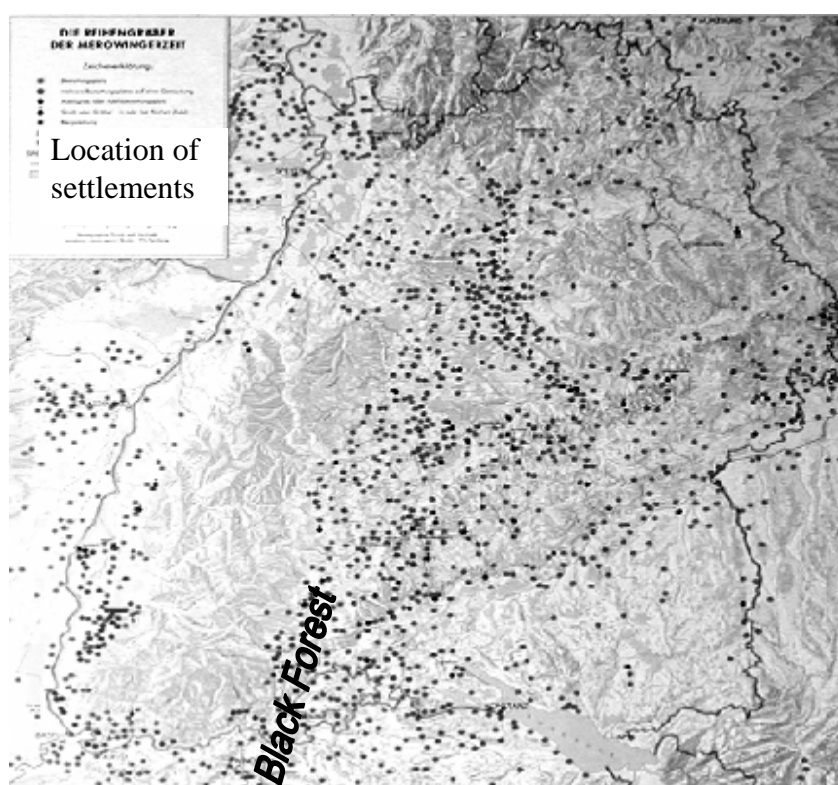


Figure 1. Location of settlements in Baden-Württemberg in the 6th and 7th century AD

Note: The map covers areas in the far south-west of Germany, bordering France and Switzerland, with the Rhein River prominent on the west and south-west.

Agriculture was organised in a three-field system, and each farmer had to have fields in every part so they could follow the rotation cycle with their agricultural crops. This resulted in very small fields. Another reason for the small fields was the intergenerational transfer system; in the event of the owner's death the farm estate had to be distributed among the children. This led to a high fragmentation of the fields among a large number of owners or tenant farmers. Figure 2 illustrates this high fragmentation under the three-field system.



Figure 2. Map of the village and the district of Obersteinbach in 1717, showing the three-field system

During the 8th, 9th and 10th centuries AD, highly favourable climatic conditions for agriculture were experienced in Europe, even better than today, and the population grew rapidly. As a result, the production of food could no longer meet the demand and also the small villages could not absorb the large number of additional people. New solutions had to be found. One was the foundation of towns and cities, which would be able to absorb the surplus of people from the countryside. Another was a growing movement to colonise and settle in the mountain areas, which had until then remained unsettled. The first settlements and villages in the Black Forest emerged in the years after 900 AD. This colonisation was organised by local noble families and by the church, mainly though abbeys or monasteries.

To overcome the unfavourable conditions for agriculture in the low mountain ranges and also to attract people to move into such strange surroundings, the organisers of this 'inner colonisation' as it was called, developed new strategies for settlement and for the farmers, as described next.

The Type of Settlement

The structure of settlement was not only the old type of village. A totally new system was established. The area to be settled was divided by a planning act into single farm holdings before the potential farmers arrived. As a result of this new planning method, the landscape was split up into a series of single farms, without a village as a centre. This structure is called 'single-farm settlement' (or *Einzelhofsiedlung* in German). This means detached farmhouses, spread out over the landscape following a typical pattern of settlement along rivers and creeks. Each farm holding had its whole area around the farmhouse. The boundaries were fixed at right angles to the creek, starting from one watershed at the ridge and ending at the other watershed. The distance to the next holding was about 300 to 800 m. The farmhouse was located near the creek to ensure a water supply. All these details can be seen in the map of the district of Schonach from 1783 (Figures 3 and 4).

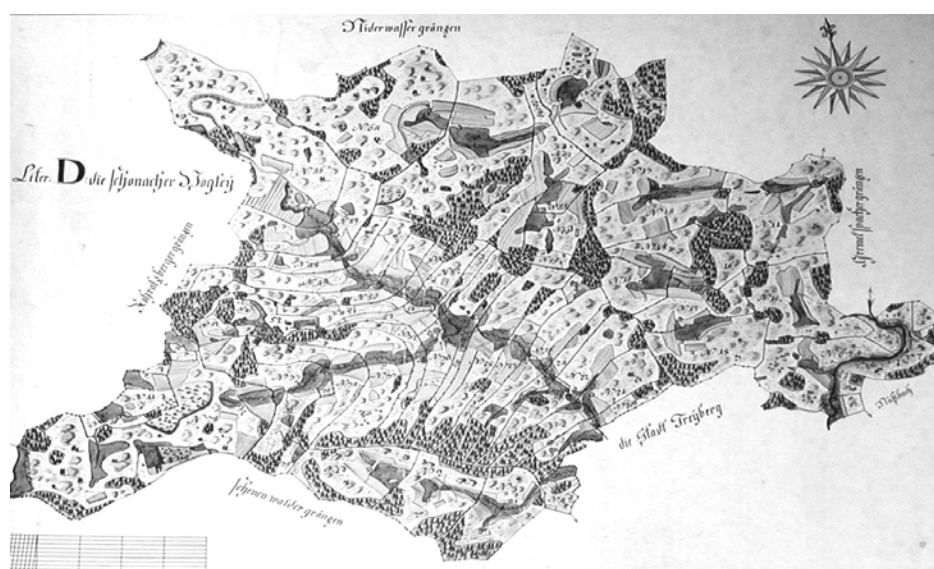


Figure 3. Map of the district of Schonach in the Black Forest in 1783



Figure 4. Detail from the map of Schonach, showing mainly borders and the structure of farm Nr. 28

Larger Farm Holdings

The farm holdings in the low mountain ranges were considerably larger than in the lowlands. In the village of Schonach (Figure 3) the average size of a full farm holding was about 20 ha of agricultural land, not including forests and meadows. These were under common ownership with common use and administration. In the Black Forest, the farm holdings with about 40-100 ha of land in total, including agricultural fields, meadows and forests, were designed by the organisers of the settlement.

Stronger Rights of Disposal over the Farm Holding by the Farmer and his Family

At the end of the 16th and in the 17th century, farmers achieved total ownership over the farm holding. Additionally, in the case of inheritance, splitting the farm among the children was not permitted. Only one son or daughter could take over the estate. For tax reasons in the Black Forest, normally the youngest son was the heir; this delayed payment of succession duties.

The Farmhouse as a 'One-roof-house'

All persons – the family of the owner, a large number of farm-workers, milkmaids and other help – as well as the cattle, the equipment, the hay and other crops, had space under one roof in a large house. Usually, these farmhouses were built of timber and required a floor area of at least 200-300 m². A photograph of a typical farmhouse is presented as Figure 5.



Figure 5. A typical one-roof farmhouse

SLASH-AND-BURN FARMING OF THE 18TH AND 19TH CENTURIES

Under the conditions of the Black Forest (and also of other mountainous regions in Germany) the farmers developed a special land-use system. On the same area can be found in a timely succession the growing and harvest of agricultural crops and of fuelwood. The land managed under this so-called ‘slash-and-burn farming’ (*Reutfeldwirtschaft* in German) was especially used to cultivate some agricultural crops on steep slopes.

Under the slash-and-burn system, a stand of trees and scrubs was totally cleared at an age of 10 to 20 years. All wood which could be used as fuelwood was selected and transported to the farm house. The rest – small branches, litter and leaves – was burnt. This was done in a carefully controlled manner, with all persons of a farm working during the fire on this area, steering the fire from the top of the slope downwards and avoiding a flash over to other areas. Figure 6 illustrates the management of the burning operation.

The ash was worked into the soil as fertilizer. In the following spring the agricultural crop was sown – mainly rye, oats or buck weed. These crops were cultivated for one up to three years. In the second and third year, the shoots of the trees and bushes had to be broken down by hand so that the crop was able to grow and be harvested. At the latest, after three years the area was returned to trees and bushes. There was usually no artificial regeneration (tree planting). By natural regeneration, mainly tree species such as birch, willow, hazel-bush and broom, and less often maple, oak, beech and silver-fir, came up. This stand could grow up for 10 to 20 years. After this period the cycle commenced again.



Figure 6. Controlling the fire in slash-and-burn farming

Corresponding to the length of the rotation, the total area of a farm which was managed by this system was divided into 10 to 20 parts, so that every year an approximately equal area was cleared, burnt and cultivated.

This slash-and-burn system had so many advantages that it was used in the Black Forest in a highly intensive way. Thus in the district of Schonach in 1783 about 62% of the total area was managed by this system. The old forests covered only 16%, and meadows and arable land comprised 22% (see Figures 3 and 4). On average about 30% of the total surface in the middle and southern part of the Black Forest was managed by slash-and-burn farming around 1780. The dominance of this system was concentrated in those regions where the conditions were favourable for it.

THE DECLINE OF FARMS AND OF FARMING IN THE BLACK FOREST

In the 19th century, Germany developed from an agrarian state to an industrial country. Great changes took place and great challenges also had to be met. In the production of agricultural goods, an intense evolution or even a revolution took place. New products had been introduced, such as Indian corn, lucerne and clover. New techniques and new machines were developed – e.g. stable feeding and tractors – and therefore the three-field system was abolished. Artificial fertilizers had been invented and were developed by a flourishing and rapidly expanding chemical industry. Agricultural products were integrated in the world trade system, and German farmers had to compete with low-cost agricultural commodities from the USA and Australia.

All these aspects led to drastic economic consequences. The productivity per hectare of arable land increased rapidly, and less area was required to produce the quantity of goods which was needed. Agricultural production was concentrated on the most suitable soils, in terms of topography, fertility and other factors. The amount of land which was classified as marginal land from an economic point of view, increased. Especially the farms, and the type of farming in the mountainous regions had to suffer from these changes. The income of the farmers decreased rapidly, and the possibility to introduce new techniques or products was very limited.

In the Black Forest, two ways to overcome these problems could be observed. The drastic solution was giving up the farm and moving away. This happened to a great extent. Mostly the farmland and the forests were sold to the state forest administration (sometimes after passing a private buyer, who exploited the existing forest and sold it to the State afterwards). The only kind of production which promised economic success in the long run during this time was forestry and timber production. Therefore the state forest administration dedicated all these new acquisitions to forestry and afforested all arable land and meadows. The farmhouses were demolished. About 30,000 ha in the middle and southern Black Forest changed in this way from private farms to public ownership and thus became part of the state forest. Farmers who decided to stay, increased their forest area by afforesting their marginal land. Mainly, the slash-and-burn farming areas were given back to the forests, and timber production became the main purpose for these areas. These severe changes and new developments extended over a period of about 200 years. Even in the first decades after World War 2, there was a wave of afforestation of land on which agricultural production had been given up.

The statistics show the following results: slash-and-burn areas disappeared before 1925; the woodland area increased from 30% to over 50% from 1780 to 1985; and the area of cropping land contracted to a residual of about 10% (Figure 7).



Figure 7. Changes in land-use systems in the Black Forest over 1780 to 1985

Today the main land-use systems in the Black Forest are pasture for cattle breeding and milk-production (also meat) and forests for production of high-quality timber, mainly sawn timber. In the case of the district of Schonach, the woodland area has increased from 16% to more than 50%, as illustrated in Figure 8.



Figure 8. Map of Schonach 1990

Note: The grey areas have returned to forestland.

The advance of the forest cover is also documented in a map of the district of Hinterzarten: the distribution of forests is mapped for the years 1772, 1899 and 1993, in Figure 9.

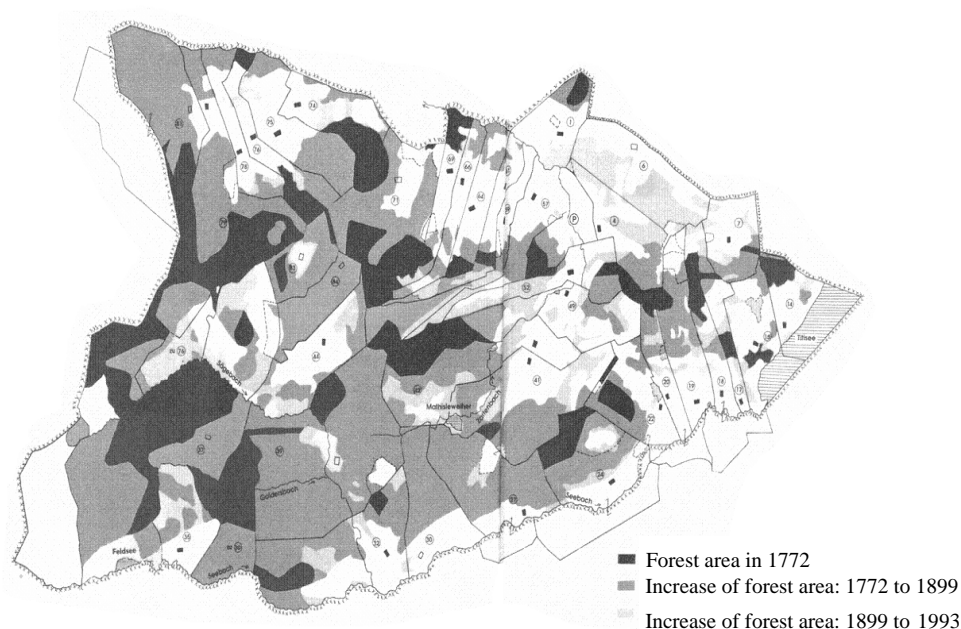


Figure 9. Increase of the forest area in the district of Hinterzarten from 1772 to 1993

The periods of expanding farmlands in the Black Forest, and the retreat, can also be shown by an example of a small district, cleared and settled by three farms during the 16th century, as depicted in Figure 10.

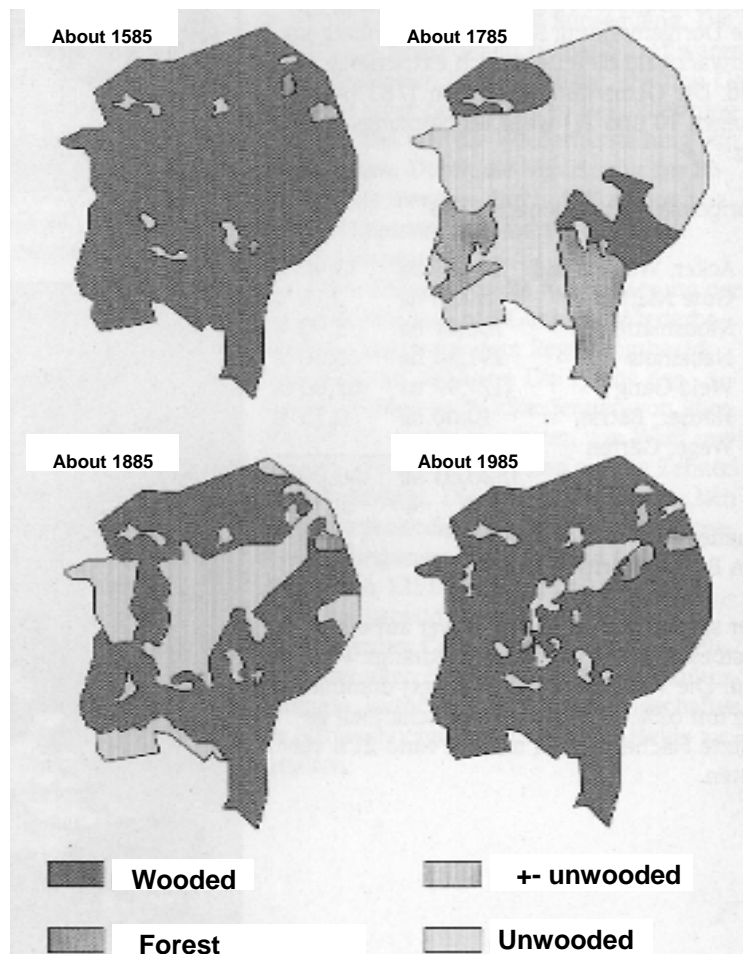


Figure 10. Expanding and shrinking of farmland in a steep district in the Black Forest

CURRENT LAND USE IN THE BLACK FOREST

The critical economic situation of farms and of farming in the Black Forest has been a phenomenon throughout the last 200 years, and it is still a problem today. The result is a continuing structural change regarding farms and farmland. Statistically, there was a decrease of more than 30% in the number of farms in the southern part of the Black Forest between 1971 and 1995. Some changes have taken place compared to the situation in the 19th century, on one hand in the behaviour of the farmers, and on the other hand, in the circumstances. The farmers who give up farming and seek another possibility for earning their livelihood do not sell their entire property. Only the farm land is sold or farmed out; the woodland area remains in the ownership of the farmer's family. Thus, a change has been taking place from

combined farms with agricultural land and forests to a pure ownership of forests. This change has many implications which cannot be explained in this paper.

Regarding the circumstances, new conditions also apply. For example, only in clearly defined areas for structural reasons can the State buy forestland, and only if no private person is interested in this particular piece of forestland. By this means, larger farms are able to expand and to strengthen their competitiveness.

The statistics also show that the process of giving up farms is very slow in cases when the combined farms have more than 5 ha of forests to their disposal (Selter 2003). The forests contribute to the family income to an extent which should not be overlooked. In order to decrease the structural changes in rural areas, the State has also developed a system of financial subsidies both for agricultural production and for forestry in privately-owned enterprises. In this way, the possibility to survive as a farmer in the Black Forest is improved.

The trend to afforest farm land in the Black Forest has slowed down remarkably. Aspects regarding tourism – such as necessitating that the landscape be kept open to a specific minimum percentage – have the result that in many cases afforestation is not allowed. This is also a new situation compared to the 19th century: each afforestation is strictly bound to a licence of the local authorities.

Another major change is that the sources of income of the farm family, which until the 1960s were mainly confined to agriculture and forestry, have greatly diversified. Farmers have looked for income possibilities outside the classical fields of work, and they have been successful. An investigation in the Southern Black Forest has shown that there are three sources of income at present (Figure 11). Income is generated from employed or self-employed jobs outside the farm. In this way the larger part of the income of a family (36%) comes from such external possibilities, while agriculture with 35% and forestry with 29% are no longer the dominant sources of income. One very successful way to create new income sources has been to use the large farmhouses as an attraction for tourists. These houses used to have a lot of unused space (which earlier served as rooms for helpers), and it has been an attractive investment to rebuild this space as apartments and rooms for holiday-makers.

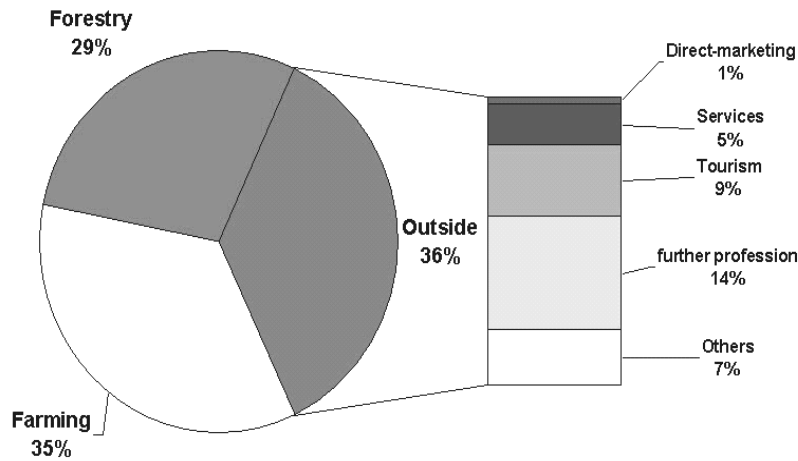


Figure 11. Income sources and their share of total income of farms in the southern Black Forest

The direct marketing of farm products – including milk, butter, cheese, meat, eggs, home-made bread, honey, and special kinds of liquors such as kirsch – for the final consumer is also a way to achieve higher prices for these specialities so as to increase income. Job opportunities in nearby villages and towns also have been used.

With such a bundle of own initiatives by the farmers and of instruments and measurements from outside, mainly from the state administration, it seems to be possible to ensure the livelihood for a sufficient number of farms to maintain a viable regional structure and a sustainable tending of the entire landscape for all purposes.

CONCLUDING COMMENTS

The Black Forest in southern Germany was settled relatively late in history, because of the difficult terrain for agriculture. Various forces of history have shaped the Black Forest to the kind of farming and forestry area it is today. One of the outcomes has been a fragmented ownership. However, a highly favourable area for tourism has developed. The type of vegetation has changed from mainly deciduous species to mainly conifers, although the proportion of deciduous species including oak and beech is now gradually being increased. The level of reforestation has been such that it has become necessary to place restraints on further tree planting to maintain the current highly attractive landscape.

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